

PRODUCTION OF THIN-FILM TRANSISTOR MATRIX

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Abstract

PURPOSE: To make the brightness of a liquid crystal panel higher and the performance higher by increasing the transmittance of a thin-film transistor(TFT) matrix by suppressing an increase in the number of stages referring to the production of (TFT) matrix.

CONSTITUTION: A transparent conductive film 11 consisting of a ZnO:Al film forming an electrode of auxiliary capacitor and a dielectric substance film 12 of auxiliary capacitor consisting of Al₂O₃ are formed by using an atomic layer deposition(ALD) method on a transparent substrate 1 having an insulation characteristic and gate electrodes 2 are formed on this substrate. A gate insulating film 4, an operating semiconductor layer 5 and a channel protective film 6 are successively formed thereon and are so patterned that the channel protective films right above the gate electrodes are made to remain. A contact layer 7 consisting of a high-concn. semiconductor and a metallic film 8 are successively formed on the substrate and are patterned to form drain electrodes and source electrodes. The transparent conductive film is formed on the substrate and is so patterned as to connect the source electrode, thereby, pixel electrode 10 is formed and the auxiliary capacitor formed between it and the transparent conductive film.